

Theoretical Logic, Dilemma Analysis, and Breakthrough Strategies for Cross-Cultural Communication from the Spatial Perspective of the “Digital Silk Road” *

Xie Guihai

2026-07-06

ChinaRxiv

View the original and related papers at
<https://chinaxiv.org/items/chinaxiv-202607.00087>

Source: ChinaXiv. Machine translation. Verify with the original.

Abstract

[Purpose/Significance] The digital characteristics embedded in the Digital Silk Road provide a digital spatial logic for cross-cultural communication that differs from traditional cultural exchange. This paper attempts to reveal the logical mechanism of cross-cultural communication in the new type of digital space constructed by the Digital Silk Road, identify potential risks, and explore coping strategies, so as to promote the deep integration of the digital blueprint and cultural exchange and realize the transformation of dialogue among civilizations from “coexistence” to “common prosperity.” [Method/Process] By constructing an analytical framework of “spatial trialectics,” and taking “spatial practice—representations of space—representational space” as dimensions, this paper explores the digital spatial conception and empowerment mechanism of cross-cultural communication. [Results/Conclusion] The study finds that, in the dimension of spatial practice, digital carriers lay the “rematerialized” physical foundation and cultural flow paths for cross-cultural communication; in the dimension of representations of space, new spatial orders such as digital standards and rules are derived; and in the dimension of representational space, digital spatial empowerment promotes the reconstruction of meaning by the subjects of cross-cultural communication practice in the digital era. Meanwhile, cross-cultural communication faces multidimensional risks in digital space, including the formation of new physical barriers by digital infrastructure, algorithm-driven cultural bias and deviations in cognitive frameworks that deepen cognitive gaps, and the disordering of cross-cultural meaning caused by the absence or inadequacy of rules. In response to these risks, this paper proposes a breakthrough strategy of “spatial expansion—rule-based governance—core re-embedding—quality enhancement,” emphasizing the organic integration of digital space and cultural practice in the construction of the Digital Silk Road, thereby providing practical pathway references for mutual learning among civilizations in countries and regions along the route.

Full Text

Theoretical Logic, Dilemma Analysis, and Breakthrough Strategies for Cross-Cultural Communication from the Spatial Perspective of the “Digital Silk Road” *

Xie Guihai

(Guangxi Academy of Social Sciences, Nanning 530022)

Abstract: [Purpose/Significance] The digital characteristics embedded in the Digital Silk Road provide cross-cultural communication with a digital spatial logic distinct from that of traditional cultural exchange. This paper seeks to

reveal the logical mechanisms of cross-cultural communication within the new type of digital space constructed by the Digital Silk Road, identify potential risks, and explore coping strategies, so as to promote the deep integration of the digital blueprint and cultural exchange and realize a transition in civilizational dialogue from “coexistence” to “co-prosperity.” [Method/Process] By constructing an analytical framework of “spatial trialectics,” and taking “spatial practice—representations of space—representational space” as the dimensions of analysis, this paper discusses the digital-spatial orientation and enabling mechanisms of cross-cultural communication. [Results/Conclusions] The study finds that, in the dimension of spatial practice, digital carriers have laid the “re-materialized” physical foundation and cultural-flow pathways for cross-cultural communication; in the dimension of representations of space, new spatial orders such as digital standards and rules have emerged; and in the dimension of representational space, the empowerment of digital space has advanced the reconstruction of meaning by the practical subjects of cross-cultural communication in the digital era. At the same time, cross-cultural communication in digital space faces multidimensional risks, including the formation of new physical barriers by digital infrastructure, the deepening of cognitive estrangement caused by algorithm-driven cultural bias and deviations in cognitive frameworks, and the disordering of cross-cultural meaning due to the absence and inadequacy of rules. In response to these risks, this paper proposes a breakthrough strategy of “spatial expansion—rule governance—core re-embedding—qualitative upgrading,” emphasizing the promotion of organic integration between digital space and cultural practice in the construction of the Digital Silk Road, and providing practical and feasible pathway references for mutual learning among civilizations in countries and regions along the route.

Keywords: Digital Silk Road; digital space; cross-cultural communication

Classification No.: G125.1

DOI: 10.31193/SSAP.J.ISSN.2096-6695.2026.02.01

The report to the 20th National Congress of the Communist Party of China pointed out that we should “stand firmly in the position of Chinese culture, accelerate the construction of China’s discourse and narrative systems, tell China’s stories well, and make China’s voice heard”[1], thereby indicating the direction and providing fundamental guidance for China’s international communication and cultural exchange work in the new era. Against this backdrop, the Digital Silk Road—also known as the “Digital Silk Route”—as a major practice through which China actively implements the concept of “building a community with a shared future in cyberspace,” has not only strengthened infrastructure connectivity, but has also opened up, at the cultural level, an entirely new digital landscape for cross-cultural communication. Jointly building the Digital Silk Road is a process of large-scale spatial reorganization and spatial opening empowered by digitalization; it has reconstructed the temporal-spatial structure and discourse mechanisms of cross-cultural communication, shaped a new field characterized by the integration of the virtual and the real and distinct from

traditional models, and displayed clear features of the digital era and a unique value logic. To connect the digital space constructed by the Digital Silk Road with cross-cultural communi-

* This paper is one of the research results of the National Social Science Fund general project “‘Digital Silk Road’: Research on the Mechanism and Pathways for Spreading Chinese Culture to ASEAN from a Spatial Perspective” (Project No.: 25BGJ042).

[**Author Biography**] Xie Guihai, male, research fellow, research interests: China-ASEAN international relations, Email: xieguihai2005@126.com.

organically links flows, and examines cross-cultural exchange that advances “people-to-people connectivity” within the development blueprint of the Belt and Road Initiative. Systematically elucidating the digital-spatial mechanisms, value orientations, and practical pathways of cross-cultural exchange is of profound contemporary significance for promoting cultural communication, integration, and mutual learning through digital civilization, and ultimately for realizing the common prosperity of human civilizations.

1 The Digital Silk Road and Cross-Cultural Exchange

Space is the basic dimension and physical carrier of human practical activity. With the deepening development of the digital age, the information revolution represented by the Internet, big data, artificial intelligence, and other technologies is reshaping social structures, economic forms, and cultural ecologies with unprecedented breadth and depth, propelling humanity into a new stage marked by cyberspace. As a new type of “digital space,” cyberspace breaks through the physical boundaries of traditional geographical space and provides entirely new fields and possibilities for human interaction. In this space, collisions and integration among different civilizations and cultures have become increasingly frequent and complex. General Secretary Xi Jinping has profoundly pointed out that “cyberspace is the shared spiritual home of hundreds of millions of people”^[2]. As early as the Second World Internet Conference in 2015, General Secretary Xi Jinping put forward the “Four Principles” and “Five Proposals” for global Internet development and governance, advocating the building of a community with a shared future in cyberspace and indicating the direction for global Internet governance and development. The 2024 World Internet Conference Digital Silk Road Development Forum further consolidated international consensus, emphasizing the joint formulation of digital governance rules, the deepening of technological cooperation and cultural mutual learning, and the continued promotion of building a community with a shared future in cyberspace^[3]. These ideas and practices have enabled the “Digital Silk Road” to transcend the category of purely economic and technological cooperation and become an intercultural field in cyberspace in which groups from different cultural backgrounds engage in meaning production, emotional interaction, and value negotiation.

As an important extension and innovative practice of the Belt and Road Initiative in the field of digitalization, the “Digital Silk Road” has become a research hotspot of sustained academic attention since it was formally proposed at the First Belt and Road Forum for International Cooperation in 2017. As one of the research dimensions of the Digital Silk Road, “digital space” mainly involves two interwoven areas: first, digital-space governance and security; second, cross-cultural interaction in cyberspace. With regard to digital-space governance and security, existing research has mainly focused on issues such as cybersecurity, data sovereignty, and cross-border data flows ^[4–6]. In the field of cross-cultural interaction in cyberspace, the deepening construction of the Digital Silk Road has replaced traditional geo-connectivity with “digital connectivity,” thereby providing a digital-spatial perspective for research on cross-cultural exchange. The “Network Society” theory and the concept of “Space of Flows” proposed by the American scholar Manuel Castells are enlightening for understanding spatial forms in the digital age; he argues that traditional “spaces of places” are being replaced by a global “space of flows” ^[7]. In relevant domestic research, Gong Jianfei et al. ^[8] argue that digital cultural space, as “the overall movement of all subjective and objective conditions that make certain digital cultural practices possible,” is not a static virtual container, but an open system with functions of cultural production, consumption, storage, and interaction; through cultural migration and integrative innovation, it realizes the mutual generation of the virtual and the real and promotes cross-field integration between native culture and digital culture. Xie Xuefang ^[9], starting from the “technology-culture-institution” model, analyzes the transformation logic of digital cultural space toward “digital-intelligentization, immersion, and experientialization.” Shi Anbin et al. ^[10] propose that, as a form of “inclusive globalization,” the Digital Silk Road bridges the digital divide through investment in digital infrastructure and networking projects, providing feasible pathways for disadvantaged groups marginalized by neoliberal globalization to participate in the global digital economy and information flows. Chen Lianjun et al. ^[11] place “jointly building the Digital Silk Road” within the strategic framework of promoting democratic governance of global cyberspace, systematically constructing a theoretical framework for cross-cultural interaction rituals in cyberspace and providing an important theoretical perspective for understanding cross-cultural interaction in digital space.

Research on the integration of the Digital Silk Road with the field of cross-cultural exchange has paid relatively little attention to the carrier dimension of “digital space,” and systematic research on the reconstruction of cross-cultural exchange space driven by digital technologies remains insufficient. Specifically, first, digital technology’s impact on cross-cultural inter—

The impact on exchange and dissemination is mostly explained at the level of phenomena; digital technology is generally regarded as a “means” or “tool” for transmitting cultural content, while its special role in reshaping social relations, producing power structures, and constructing cultural meaning is neglected. Second, although attention has been paid to the role of the Digital Silk Road in

promoting cross-cultural exchange, there has been no in-depth interpretation of the specific forms and operating mechanisms of the cross-cultural exchange space shaped by the Digital Silk Road, nor of the features that distinguish it from traditional geographical space. On this basis, this paper seeks to construct a digital-spatial conception of cross-cultural exchange in the context of the Digital Silk Road, to interpret—through the “triadic theory of space” — the theoretical logic and enabling mechanism by which the Digital Silk Road facilitates cross-cultural exchange, to examine the practical dilemmas currently encountered, and to propose corresponding paths for breakthrough. In doing so, it aims to further enrich the theoretical connotations and practical paradigms of cross-cultural exchange in the digital era and to provide a certain reference for promoting dialogue and mutual learning among civilizations.

2 The Spatial Mechanism of Cross-Cultural Exchange from the Perspective of the “Digital Silk Road”

2.1 The “Triadic Theory of Space” and the Spatial Turn in Cross-Cultural Exchange Promoted by the Digital Silk Road

In the contemporary era of rapid digital-technological development, space is undergoing profound reconstruction. Although digital space appears in virtual form, it possesses marked social reality and productivity and has become a new type of public sphere for interaction [12]. Digital space is increasingly demonstrating its power to reshape economic, social, and cultural structures, becoming a core issue of interdisciplinary concern. As a new type of social space, digital space has broken through the traditional constraints of time and space, opened up sites of new significance for social activities, and shifted the relationship between people and space from the binary “human-land” relationship to the ternary “human-land-network” relationship. Correspondingly, what extends along with digital space is a new round of flows and distribution of capital, culture, and power [13].

The French philosopher Henri Lefebvre was one of the earliest scholars to systematically expound the concept of space. The “triadic theory of space” he proposed in *The Production of Space* provides a systematic theoretical framework for understanding the social productivity and dialectical structure of space. The “triadic theory of space” explains that space is not a static, neutral container, but rather a dynamic product produced and shaped by social relations, while in turn shaping those relations; that is, space is “produced” rather than “given.” The three layers of meaning of space are as follows. First is spatial practice, perceived space: the material form of social spatiality, whose core is the reproduction of social relations [14]. “Spatial practice is the process of producing the material form of social spatiality; therefore, it manifests both as the medium of human activities, behaviors, and experiences, and as their result” [15]. Second is representations of space, conceived space: a conceptualized space defined and planned through knowledge, symbols, codes, and discourse. Although abstract

in form, it is directly connected to the real forms of spatial production, represents a series of spatial normative systems, and also projects an implicit “power of space.” Third is representational space, lived space: a space closely connected with the everyday life, emotions, memories, imagination, and hidden histories of those who experience it. Through everyday practice and imagination, it can reproduce new spaces; its core is an imaginative and symbolic field constructed within the discipline of “representations of space,” and it leads toward multidimensional cultural critique [16]. Logically, the three stand in a progressive and cyclical relationship: “spatial practice” and “representations of space” are manifested as the connection between productive forces and relations of production, while “representational space” constitutes an active response to, and creative transformation of, the first two.

At the end of the twentieth century, the theory of the production of space was introduced into China, and Chinese scholars also began to use related theories of spatial production to conduct empirical research on specific types of spatial forms and the mechanisms of their existence. Beginning with an initial focus on the development of urban space, such research rapidly extended into fields such as human geography, the sociology of social relations, and cultural studies. Through the three-dimensional perspective of spatial practice, representations of space, and representational space, scholars have analyzed the production and composition of material space, economic space, institutional space, and social space, as well as how spatial subjects achieve mutual benefit and win-win outcomes amid the tug-of-war among different forms of power. Looking to the present, with the rapid development of digital technologies, big data, cloud computing, the Internet of Things, and artificial intelligence

and other technologies layered with scenario-based applications, digital space has become a key focus of contemporary theories of spatial production.

The Digital Silk Road has moved from conceptual imagining to grounded implementation. The digital space it creates is gradually developing from an appendage of physical space into an operating subject with its own independent logic, driving cross-cultural exchange through a profound “spatial turn”: that is, from a physical space dependent on geographical adjacency toward a new space of social relations constructed by digital technologies and dynamically generated. Within this new type of space, cross-cultural exchange, on the one hand, transcends the operating mechanisms of traditional physical space under the impetus of digital transformation; on the other hand, its evolutionary process also corresponds to the spatial production sequence of “practice—conception—lived experience” revealed by the “spatial triad,” thereby providing a theoretical analytical framework for examining how the Digital Silk Road promotes the “production” of new cross-cultural spaces and their mechanisms of action.

In the field of cross-cultural exchange, the Digital Silk Road is oriented toward “digital connectivity,” breaking through the limits of traditional physical time and space and endowing cross-cultural exchange with a digital spatial ideology distinct from traditional cultural exchange and communication. On the one

hand, with digital infrastructure as its carrier, and relying on layered technologies such as the Internet, cloud computing, and the metaverse, it forms a plural, dynamic, and immersive digital space, enabling cross-cultural exchange practices to gradually shed their dependence on geographical space. It creates a digital space that maps reality and even transcends reality, achieving a paradigmatic transformation from “physical attachment” to “digital nativeness.” On the other hand, in the new spatial practices constructed by digital infrastructure, cultural actors are able to overcome barriers of region, ethnicity, and language, realizing the direct presentation and deep interaction of customs, values, and spirit. This overcomes the temporal-spatial disorder of traditional cultural exchange, greatly strengthens the experiential quality and effectiveness of mutual learning among civilizations, and helps put into practice the “people-to-people connectivity” advocated by the Belt and Road Initiative. At a deeper level, the cross-cultural digital space embedded in the Digital Silk Road is not a mere derivation or simple replication of real-world cross-cultural exchange scenarios, nor is it a digital extension of real space^[17]. Rather, it is a higher-order meaningful space derived under technological empowerment and possessing social productivity. Specifically, first, it promotes the shift of cross-cultural exchange from disembodied communication to embodied communication, constructs new narrative modes between the virtual and the real, breaks through traditional temporal flows and spatial fields, completes the “spatial empowerment” of cross-cultural exchange, and forms new communicative power. Second, cross-cultural exchange shifts from knowledge dissemination and cultural narrative toward spatial production and cultural practice, constructing spatial nodes in digital networks so that cross-cultural exchange practices more clearly map the structures and relations of digital society. Thus, as a productive semantic field, the cross-cultural exchange space created by the Digital Silk Road infinitely expands the spatial domains of cross-cultural communication, generates entirely new scenario-based value for the thematic selection and narrative modes of cross-cultural exchange, and endows cross-cultural exchange with a digital-spatial circulation of meaning.

2.2 Spatial Practice: The “Rematerialization” of Digital Infrastructure and the Generation of Paths for Cultural Flows

From the perspective of the “Digital Silk Road,” the process of “rematerialization” of digital infrastructure in the physical world constructed through spatial practice dynamically produces a new kind of social spatiality that serves cross-cultural exchange. Interconnectivity among infrastructure is the core issue in jointly building the Digital Silk Road. Digital facilities such as cross-border optical cables, fiber-optic networks, cloud computing centers, and satellite networks have built digital channels for exchanges across national borders and regions. Smart city construction provides efficient and stable digital services for the integration of the cultures of different regions and ethnic groups into local life. This not only provides, in practice, the basic premise of “rematerializa-

tion” for carrying out cross-cultural exchange, but also, at the theoretical level, reflects the deep interaction between the infrastructuralization of media and the social embeddedness of digital technologies. Digital infrastructure, with high-performance communication networks as its main framework, has established the physical foundation for the spatial practice of cross-cultural exchange; continuously rising mobile network speeds have strengthened the capacity for transmitting cultural data. For example, cross-border digital project carriers currently being advanced—such as the “China-ASEAN Information Harbor,” the “China-Arab Online Silk Road,” and the “China-Central Asia Computing Power Community”—as well as the construction of the multilingual corpus “Wan Juan Silk Road,” which includes five languages, namely Thai, Russian, Arabic, Korean, and Vietnamese, use digital physical links or database foundations to preset and generate the potential directions and main channels of cultural information flows. They weave cultural nodes that originally existed in a dispersed state into a unified network topology, thereby completing the construction of the physical space that carries cross-cultural exchange practices. Further, the physical deployment, protocol standards, and comput—

...allocation of power, stipulating the priority routes and efficiency of data flows, and regulating at the technical level the potential paths and forms of cultural flows. It provides unprecedented technological empowerment for large-scale, real-time cross-cultural interaction. Cultural flows are no longer attached to traditional physical space and tangible carriers, making multimodal, nonlinear, and multidirectional cultural communication possible, while also promoting the continuous evolution of the connotations and extensions of cross-cultural exchange. Thus, the interconnection of digital infrastructure has surpassed the traditional “channel” meaning of information transmission and has become a new type of cross-cultural exchange field supported by carriers and empowered by technology; it is a concrete manifestation of the spatial practice of cross-cultural exchange in the digital era.

2.3 Spatial Representation: Standards, Rules, and Power Giving Rise to Spatial Order

The digital order marked by digital technology, data standards, and cross-border data regulation constitutes the practice of spatial representation in the construction of the Digital Silk Road. Infrastructure interconnection networks build the physical network through which cultural information flows, reflecting the existing reality of spatial practice while also deriving new spatial orders—such as standards and rules extended by digital technology. This is manifested as a conceptualized space systematically planned by multiple power subjects through technical standards, governance rules, and ideological discourse. Actor-Network Theory (ANT) points out that the formation of networks depends on the process of “translation” among different actors: through mechanisms and means such as problem definition, interestment, role allocation, and mobilization, collaboration toward goals and the stabilization of networks are achieved, aligning the

goals of multiple actors and integrating them into a stable network structure [18].

In the context of the Digital Silk Road, non-human actors such as media platforms, algorithmic models, and cultural symbols participate deeply in the reconstruction of power through platform architectures, algorithmic logic, and symbolic translation. They promote cultural actors to become “translation” hubs of cross-cultural identity, driving networks of cross-cultural exchange behavior to leap toward cultural identity and mutual learning among civilizations. The digital infrastructure constructed by the Digital Silk Road becomes the core material medium that promotes the “translation” of cross-cultural exchange. Key actors such as government agencies, market entities, and digital platforms define spatial boundaries, rules of connection, and data sovereignty by providing digital public facilities and establishing digital public domains, thereby structuring the routes and nodes of global information flows.

On the basis of media, means such as digital code, algorithmic architectures, data protocols, and institutional laws are regarded as technological actors. Through algorithmic recommendation mechanisms, node-weight allocation, and platform interaction design, they set thresholds and grammars of visibility for cultural content, thereby giving rise at the underlying architectural level to a new type of digital cultural order. For example, the smart-city construction promoted by the Digital Silk Road signifies far more than the digitization of public services at the physical level; it is also the spatial embedding of a specific governance model and cultural logic. The data-circulation paradigms and content-distribution rules it advocates preset, at the technical level, the transmission formats, speeds, and credibility standards of cultural information, and at the infrastructural level establish a non-neutral, power-oriented “technical grammar” of cultural interaction, regulating the basic framework of norms for cross-cultural exchange behavior.

The core of the actor-network—cultural actors—on the basis of using media platforms and actively or passively accepting technical norms/rules, gradually become the core drivers in the process of constructing cross-cultural identity by creating “fields of consensual meaning” [19]. Higher-level actors are institutional actors, regarded as the mediators of power within the actor-network. Through a series of international agreements, memoranda of cooperation, and platform policies, institutional actors construct macro-level institutional structures encompassing the cross-border flow of cultural data, digital-content property rights, and algorithmic ethics, thereby effectively bridging possible “rights black holes” in the actor-network.

For example, with China as a principal initiator, various parties have actively advocated new development concepts of the Digital Silk Road such as “cyber sovereignty,” “data security,” and a “community with a shared future in cyberspace.” International laws and related technical norms represented by the EU *Artificial Intelligence Act* (Regulation (EU) 2024/1689) and China’s *Measures for Security Assessment of Data Export* are committed to promoting and shaping

global digital-governance rules and standards systems. Multiple actors jointly advance the construction of spatial representation for cross-cultural exchange along the Digital Silk Road. What this reflects is the practice of structurally planning cross-cultural space: it may provide stable institutional safeguards for mutual learning among civilizations, but it may also, under the influence of specific value preferences, evolve into a new type of cultural filtering mechanism that potentially guides and constrains the direction, content, and modes of interpretation of cultural exchange. It can be seen that, while infrastructure networks driven by digital technology expand the radius of cross-cultural interaction, they also construct new, multilayered digital cultural territories, whose boundaries possess both elasticity and permea—

permeability, while also embedding power and an awareness of rules, thereby displaying a strong spatial order.

2.4 Representational Space: Meaning Reconstruction by Practicing Subjects and the Creative Generation of Cultural Space

Under the joint effect of institutional standards and rules for infrastructure interconnection and shared consensus-building, massive numbers of Internet users have been endowed with the capacity for meaning reconstruction and creative spatial generation in cross-cultural communication within Digital Silk Road scenarios. The continuous improvement of digital infrastructure, together with the spread of mobile Internet, smart terminals, and various instant-messaging tools, has enabled large numbers of ordinary users in countries along the route to access digital networks. They have thus shifted from passive recipients of culture into active nodes of cultural production and dissemination, providing a basic network of actors for large-scale, everyday cross-cultural micro-practices. In the fluid space of cross-cultural communication, digital users do not merely receive information passively and one-directionally. Rather, they selectively and strategically appropriate the technological tools provided by platforms, embedding cultural symbols, carrying collective memory, and generating emotional resonance in the service of their own emotional expression and the construction of cultural identity. Digital users who participate in cultural creation rewrite the modes of storage and forms of expression of cultural symbols; using digital technology, they transcend constraints of form, distance, and environment. Digital platforms whose main expressive forms include social media, short videos, games, and the metaverse accelerate the instantaneous flow and mixing of cultural symbols worldwide, presenting a qualitative state in which cultural symbols shed boundaries and become instantaneous. Massive numbers of users do not simply absorb cultural content within preset frameworks; instead, they detach cultural symbols in circulation from their original semantic contexts, integrate and re-create them together with local cultural elements, personal emotions, and social issues, and creatively fuse and translate cultural symbols such as abstract values, traditional customs, and ideological beliefs in the interactions of cultural exchange. This produces new forms of cultural expression.

Cross-cultural exchange as a practice generates, through fusion, negotiation, and resistance, a new space characterized by hybridity and innovation. This continuous symbolic reproduction and emotional embedding gives rise to the highest form of representational space: cultural exchange is no longer simple symbolic translation, but the generation of identity and the deepening of relationships based on shared emotional experience and creative collaboration. Thus, the field of cross-cultural exchange within the Digital Silk Road is not an orderly territory produced by one-way spatial planning; rather, it evolves into an “arena of meaning” that is constantly transformed through fusion, negotiation, and resistance. Through vivid practices, behavioral subjects both follow established technological frameworks and continually inject the differences and possibilities of cultural innovation, thereby realizing the spatial reproduction of social relations. This highlights the dialectical process whereby cross-cultural communicative subjects creatively appropriate and reconstruct meaning in dominant space through everyday digital practices, embodying mass participation empowered by technology, the reproduction of meaning of cultural symbols in circulation, and the resulting logic through which new cultural identities and representational spaces of community are formed.

3 Risks in the Digital Space of Cross-Cultural Exchange

While the Digital Silk Road expands the spatial practice of cross-cultural space, it is itself also a process of production full of tensions and contradictions. Because differences in levels of development mean that the interconnection of infrastructure has not fully eliminated the “digital divide,” new physical barriers are instead formed. The specific cultural biases and cognitive frameworks embedded in digital code, to a certain extent, derive deeper cognitive divides. When the creative practices of diverse subjects lack guidance from consensual rules, orderly negotiation may intensify into disorderly conflict, leading to the breakdown of order in cross-cultural meaning and the dissolution of shared meaning. If the interweaving of multiple spatial risks is not effectively constrained, it will weaken the intrinsic value of cross-cultural exchange in digital space and further hollow out the essence of cultural integration and mutual learning among civilizations in the digital age.

3.1 Physical Barriers: Spatial Obstacles Caused by Infrastructure Interconnectivity and Heterogeneity

Digital infrastructure has shaped the spatial practice of cross-cultural exchange and, on the basis of realizing interconnection and interoperability, has constructed global pathways for cultural flows. In practice, however, the interconnectivity and heterogeneity of digital infrastructure in countries along the Digital Silk Road constitute two major innate constraints on cross-cultural exchange.

On the one hand, the uneven distribution of infrastructure has produced an “access-oriented digital divide,” causing physical ruptures in the practical fields

of cross-cultural communication. Because the countries jointly building the “Digital Silk Road” include both advanced digital economies and underdeveloped digital economies, there are clear gradient differences in levels of economic development and technological capability. The uneven iteration of digital technologies and the unequal effects of growth have intensified the “digital divide” among regions, affecting the development of cross-cultural exchange. For co-building countries in Africa, Southeast Asia, or South Asia with weak digital infrastructure, problems such as limited coverage of intercontinental fiber-optic cables and weak submarine-cable connectivity have resulted in limited broadband-network coverage, low Internet penetration, and slow network speeds, constraining the effective transmission of information signals. Taking ASEAN as an example, the global average fixed-broadband speed is 120.52 Mbps; among the ten ASEAN countries, six fall below this average, namely: the Philippines at 109.86 Mbps, Brunei at 90.29 Mbps, Laos at 56.30 Mbps, Cambodia at 53.08 Mbps, Indonesia at 45.91 Mbps, and Myanmar at 30.94 Mbps. The global average mobile-network speed is 109.29 Mbps, and five of the ten ASEAN countries fall below this average. In addition, Singapore ranks first globally in fixed-broadband speed at 425.46 Mbps, which is 13.75 times that of Myanmar[²⁰]. Such a vast bandwidth gap not only hinders the realization of high-quality forms of cultural communication such as high-definition video and real-time interaction; more fundamentally, it undermines the temporal simultaneity and continuity required for cross-cultural communication, causing low-bandwidth regions to become marginalized within digital cultural networks and even to become “digital islands” that struggle to integrate into global networks of cultural dialogue. The “access-oriented digital divide” reflects an uneven pattern in the supply of digital public goods among countries jointly building the Digital Silk Road, and to a certain extent also weakens the aims of equality and inclusiveness advocated by the Digital Silk Road.

On the other hand, the heterogeneity of technical protocols in infrastructure has given rise to a “structural digital divide,” impeding the smooth formation of pathways for cultural flows. The process of the “rematerialization” of digital space depends not only on the deployment of physical entities such as optical fiber and data centers, but also on the consistency of underlying software protocols, data interfaces, and governance rules. At present, constrained by the uneven provision of digital public goods, countries along the route differ in areas such as optical-cable interfaces, cloud-computing protocols, and data-encryption standards. This leads to impeded and inefficient cross-border data flows and may even generate structural technological barriers. Cybersecurity management policies in different countries may create data-localization requirements, thereby also increasing the compliance costs and delays associated with the cross-border transmission of cultural content. This fragmentation of standards, corresponding to differences in levels of economic development, reflects the deeper contradictions of “path dependence” and “technological lock-in” among different countries. The “rematerialization” of digital infrastructure is, in itself, an empowering process through which digital technologies transcend

geographical constraints. Yet under the structural constraints of uneven global development—especially against the backdrop of asymmetries in technological power—digitally advanced economies occupy greater discursive power, and this in turn becomes a new mechanism for reproducing spatial inequality.

3.2 Cognitive Estrangement: The Distortion of Cultural Symbols and the Circle-Group Spatial Differentiation Triggered by Algorithmic Overreach

In spatial representations centered on digital rules and digital order, algorithms and platform rules have become dominant planning forces, defining the order of cultural interaction. Faced with a complex and multifaceted online cultural environment, under the digital algorithms and rules composed of cold “0” and “1” digital symbols, science and technology manifest a new kind of “alien, hostile, and ruling power” [21]. Through the two core mechanisms of “algorithmic circle-group formation” and “blurred digital identity,” this leads to estrangement in cultural cognition and distortion in symbolic meaning.

On the one hand, the drive of algorithmic circles and capital’s pursuit of profit leads to ruptures in cognitive frameworks and the reinforcement of prejudice. Algorithmic tools on digital platforms—such as search engines and social-media recommendation systems—distribute content on the basis of historical data and user-behavior profiles, continuously confining users within homogeneous information environments. This may reinforce cultural stereotypes and even solidify certain cultural labels. Because platformized relational networks and power structures have been reorganized, cultures occupying advantageous positions within algorithms enjoy greater visibility and interpretive authority, while marginalized cultural groups face the risk of being “digitally colonized.” Their cultural symbols are simplified, distorted, or obscured within mainstream narratives, thereby deepening existing cognitive divides.

On the other hand, digital media blur the boundary between the “self” and the “other,” producing the fluidity of digital identity and a crisis of identification.

With the deepening development of digital technology, the mediating technologies of communication have leapt from “tools” to environmental forces that shape the very nature of communication. Cross-cultural communication has witnessed the compression of time and space and the expansion of experience; the instantaneity of cultural communication has reached an extreme, while the metaverse creates a form of “co-presence” that transcends the physical, allowing individuals to move freely within plural and open cultural fields. Cultural identity has thus shown an increasingly fluid and hybrid tendency, while the corresponding politics finds it difficult to encompass complex cultural realities

. Digital media blur the boundary between the “self” and the “other,” intensifying the fragmentation and high mobility of cultural identity. First, identity per-

formance and symbols become superficialized: virtual avatars, multi-platform accounts, and anonymous communities render cultural identity fragmented and mobile. On digital platforms, users may freely select cultural symbols to construct new identities, and individuals' switching of strategies for identity performance across different platforms also increases the turbulent risks of identity nomadism, challenging the boundaries of real-world identity. Second, there is a lack of frameworks for cultural consensus. When the complexity and plurality of identity performance lack a stable framework of cultural consensus as support, collisions among different cultural symbols can hardly generate deep understanding and resonance. Algorithms discipline cognition through the differentiation of circles and groups, while the unlimited mobility of digital identity dissolves the foundation for in-depth dialogue. This predicament reveals that technology is by no means neutral: it profoundly reflects the internal tensions among algorithmic ethics, platform governance, and cultural diversity, constituting a core challenge that digital cross-cultural communication must confront.

3.3 Disorder of Order: Spatial-Order Conflicts Triggered by the Absence of Rules and the Solidification of Power Structures

Within the field of cross-cultural communication constructed by the Digital Silk Road, representational space—as a lived field full of emotion and identification, actively created by users through everyday practice—depends for its orderly development on fair rules and inclusive power structures. However, as an innovative project, the Digital Silk Road has, within the digital ecosystem, brought together conflicts over data ethics, the absence of algorithmic justice, and the divide in digital literacy; together these have led to the absence of rules and the solidification of power structures, thereby triggering profound disorder in spatial order.

On the one hand, digital rules are absent, producing cross-cultural conflicts over data ethics and algorithmic justice. Driven by the logic of capital's pursuit of profit, the instrumental rationality of digital platforms continually oversteps value rationality, alienating representational space—which should be filled with emotion and identification—into a domain of symbolic consumption and spectacle control. Under the impetus of platform capital's profit-seeking and the clustering of digital resources, users are trapped in a reified space in which the senses are infinitely extended, yet the spirit lacks the security of a homeland. The value intentions and spiritual meanings borne by spaces of cultural communication are absorbed and dominated by platforms' traffic logic, causing cross-cultural communication and equal dialogue to lose their proper depth and humanistic concern and to become superficial and fragmented. Especially in the absence of global consensus, the governance rules of digital platforms find it difficult to effectively reconcile values originating from different cultural traditions; notions of data privacy and requirements for algorithmic transparency differ markedly across cultural backgrounds and generate intense conflicts. For example, the West emphasizes "individual data sovereignty," whereas East Asia gives

greater priority to “collective security first.” Such conflicts of values manifest in platform rules as blurred compliance boundaries and ethical confrontation, exposing users in everyday use to risks such as privacy leakage and algorithmic discrimination, and suppressing their willingness to participate in cross-cultural dialogue.

On the other hand, the digital-literacy divide aggravates new hierarchies of cultural rights. Beyond gaps in infrastructure, differences in digital skills and media literacy lead to uneven capacities among the people of countries along the route to participate in global cultural dialogue. Among the countries jointly building the Digital Silk Road, the degree of control over raw data is positively correlated with the share of discursive power in global digital governance. Co-building countries that possess advantages in data, advanced technologies, key resources, and other forms of influence also naturally play important roles in cross-cultural communication. By contrast, users in less-developed regions, lacking technological tools and creative resources, find it difficult to resist the traffic monopoly enjoyed by developed regions and fall into a state of “digital aphasia.” For example, when Western cultural industries monopolize the attention market by virtue of their advantages in capital and traffic, the production and dissemination of local cultural content in the Global South falls into “digital aphasia” because of insufficient visibility. Marginal cultural groups, under the risk of “digital colonialism,” find it difficult to obtain equal discursive power, and their cultural expressions and value preferences are hard to incorporate into the rule systems of mainstream platforms. This is, in essence, a new form of “digital colonialism”: technological architectures solidify inequalities in cultural power, causing the diversity and creativity that representational space should possess to be constrained by a pre-set power structure.

suppression.

The cross-cultural exchange of the Digital Silk Road presents multi-level and structural dilemmas. Its deeper roots lie in the complex interactions among digital technology, rule-based power, and cultural relations as mapped by the “spatial triad theory.” This suggests that we need to examine the construction process of the Digital Silk Road from a dialectical perspective: we should affirm its positive significance in promoting cross-cultural connectivity, while also critically reflecting on the unequal mechanisms of digital reproduction embedded within it. Only through multi-level governance, rule negotiation, and cultural empathy can cross-cultural exchange achieve a profound transformation from “connection” to “integration.”

4 Constructing a Spatial Vision for Resilient, Inclusive, and Symbiotic Digital Cultural Exchange

Cross-cultural exchange and mutual learning driven by digital technology are, in essence, a creative recombination of civilizational genes amid the interweaving of algorithms and the humanities. Within the spatial carrier for cross-cultural

exchange built by the Digital Silk Road, it is necessary to move beyond superficial optimization of technological applications and turn instead toward a form of systematic governance rooted in the logic of spatial production itself, constructing a multi-level, mutually constitutive framework for action. Specifically, this includes: narrowing the technological divide through digital public goods, strengthening the resilient layout and inclusive access of infrastructure, and consolidating the material foundation for cultural flows; balancing innovation and inheritance through spatial threshold management, strengthening algorithmic governance and joint rule-making, and reshaping a cultural narrative order grounded in fairness and justice; empowering diverse actors and stimulating cultural co-creation, fostering a vibrant digital cultural ecosystem, and returning to the symbiotic wisdom of “each appreciating its own beauty, and all beauties flourishing together”; and, through ethical alignment and trust-building, achieving a qualitative upgrading of a digital-civilization community characterized by “openness and inclusiveness” in the integration of digital code and culture, so that civilizational dialogue moves from “coexistence” to “co-prosperity” in the promotion of cross-cultural exchange.

4.1 Spatial Expansion: Constructing a Resilient and Inclusive Bridge for Digital Interaction

In the construction of the Digital Silk Road, spatial practice constitutes the material foundation of cross-cultural interaction. Promoting the interconnection and interoperability of infrastructure must go beyond the simple construction of connectivity and shift toward building a digital interaction bridge that possesses both network resilience (Resilience) and digital inclusion (Inclusion), using the high-quality supply of “digital public goods” to consolidate the physical spatial base for cross-cultural interaction integrating the virtual and the real.

First, efforts should be made to bridge the “access divide” and consolidate the resilient foundation for cultural flows. To address the core issue of geopolitical complexity and technological imbalance, it is necessary to strategically extend the backbone network of the Digital Silk Road and, on the basis of existing networks, work with countries along the route to carry out systematic planning for “filling gaps, strengthening links, and weaving networks.” Priority should be given to promoting the upgrading and redundant backup construction of the Indochina Peninsula land-sea cable along the core axis of the Digital Silk Road (running through Bangkok–Kuala Lumpur–Singapore–Jakarta), thereby enhancing the resilience of regional infrastructure networks. All parties along the route should jointly plan and launch a backbone submarine optical-cable network project in the South China Sea region, connecting countries such as Vietnam, Cambodia, the Philippines, Malaysia, Indonesia, Brunei, and Timor-Leste, and building a regional digital interconnection hub. The popularization and construction of new digital infrastructure should be advanced. Relying on smart-city construction, the coordinated construction of 5G base stations, low-orbit remote-sensing satellite constellations, cloud-computing centers, data

centers, and smart-city systems should be promoted in core cities of countries along the route, so as to build a digital physical space featuring high-speed transmission, broad-area coverage, and intelligent scheduling. This would provide stable support with high carrying capacity and low latency for high-quality forms of cultural communication such as high-definition video, real-time interaction, and immersive experience, and would fundamentally solve the problem of “frame loss” in cultural transmission caused by backward digital infrastructure.

Second, a cross-cultural digital public carrier with “low barriers and high-quality experience” should be jointly created. Digital carriers should be used to promote digital inclusion, lower digital thresholds, and ensure the accessibility of digital space and the vitality of cultural practice. It is advisable to advocate the joint construction, governance, and sharing by countries along the route of national-level digital cultural resource repositories and digital cultural venues. Based on open APIs and standardized metadata protocols, these platforms should allow global creators, research institutions, cultural enterprises, and the public to conduct compliant data access, secondary creation, and dissemination, transforming closed cultural resources into mobile and renewable “digital public goods” and providing foundational materials for bottom-up cultural innovation. Government departments should be encouraged to join with cultural

Enterprises expanding overseas should develop lightweight and intelligent carriers for cultural communication, strengthen the deployment of new digital carriers such as cloud-based cultural venues, immersive experience platforms, and socialized communication matrices, and promote the establishment of vertical, multilingual social communication communities centered on specific cultural themes. In this way, a communication matrix combining “centralized platform display” with “distributed community interaction” can be formed, which both ensures the diverse visibility of cultural content and promotes interest-based, precise, and in-depth cultural dialogue, truly realizing the “visibility, accessibility, and interactability” of cultural resources across regions and ethnic groups.

4.2 Rule Governance: Building Scientifically Rigorous “Rules and Standards” and “Technical Norms”

Cross-cultural exchange from the perspective of the “Digital Silk Road” rests on two major cornerstones: technological empowerment addresses the question of “whether exchange is possible,” while rule-based coordination ensures the fairness and sustainability of “how exchange takes place.” Together, they constitute the support system for cross-cultural exchange. Guided by the concept of a community with a shared future in cyberspace, rule governance must be elevated to a strategic level equal in importance to infrastructure construction. By building a scientific, rigorous, and widely recognized system of international rules, clear “yardsticks” and “norms” can be set for cross-cultural exchange, thereby fundamentally resolving the risk of disorder in spatial order caused by the absence or conflict of rules.

First, it is necessary to advocate multi-stakeholder co-governance and build and improve mechanisms for cultural exchange and cooperation along the Digital Silk Road. The top-level design for jointly building the Digital Silk Road should be strengthened, the concept of a “digital community with a shared future” should be advocated, and, in multilateral settings, active efforts should be made to promote a new paradigm of digitally inclusive development characterized by “respect for cyber sovereignty, protection of cultural security, and promotion of inclusive development.” Countries should jointly formulate transnational standards for cultural data encoding, metadata, and interfaces, ensuring interconnection and interoperability at the technical foundation and encouraging countries along the route to work together to create a global digital environment conducive to fair exchange. At the regional level, active efforts should be made to promote the signing of “digital economy partnership agreements” centered on the cross-border flow of cultural data, coordinated protection of digital intellectual property, and transparency of platform algorithms. In response to focal points of cross-cultural conflict such as algorithmic bias, cultural respect, and data privacy, cultural diversity weights should be introduced into recommendation algorithms; diversity measurement methods oriented toward cultural representation should be constructed; and a “baseline guarantee” mechanism for cultural display should be established on mainstream cultural exchange platforms, ensuring that cultural types at the margins of algorithms obtain a basic level of visibility. Within the framework of the Digital Silk Road, countries along the route should be encouraged to jointly build a “Digital Silk Road Alliance for Algorithmic Ethics,” bringing together governments, enterprises, and the public to construct a digital regulatory model that transcends dominance by any single actor, establish a technical normative system that prevents the reinforcement of cultural bias and promotes equal dialogue among civilizations, and form a governance pattern involving the joint participation of multiple stakeholders.

Second, regulatory models should be innovated to promote the secure and compliant circulation of cultural data. In response to the reasonable concerns of various countries regarding data sovereignty and security, and under the principle of data sovereignty, government-led and enterprise-centered pilot projects should be launched to build innovation laboratories for cross-border cultural data circulation, allowing enterprises to test innovative products in controlled environments while governments simultaneously observe and formulate adaptive regulatory frameworks. Efforts should be made to explore the establishment of a data classification catalog for the cultural field, create a “whitelist” system for non-sensitive cultural resources such as digital cultural relics, intangible cultural heritage resources, academic materials, and public-interest cultural resources, actively promote the signing of bilateral or multilateral digital cultural partnership agreements among countries along the route, and explore the establishment of “regulatory sandboxes,” with a focus on resolving the problems of cultural data “islanding” and “dormancy,” thereby vigorously activating the core driving force of data elements in cross-cultural exchange.

4.3 Re-embedding the Core: Stimulating the Cultural Creativity of Difference and Coexistence

In the digital age, the fundamental driving force of cross-cultural exchange derives from the differences and collisions among different cultures. In the face of cultural segmentation and narrative rupture caused by algorithmic power, digital technology should be transformed from an external tool for distributing traffic into an empowering element endogenous to the process of cultural growth, returning to the “core” of cross-cultural exchange: the reaffirmation of cultural subjectivity and the creative reconstruction of narrative paradigms. Cross-cultural exchange should be consciously situated within the technological context of digitalization and intelligentization, the subjects, objects, intermediaries, and environments in cultural interaction should be re-examined, and these elements should be deeply integrated into the production and reproduction of cultural meaning. By empowering creative subjects, innovating narrative logic, and constructing emotional connections, the inherent creative tension within cultural differences can be stimulated, enabling digital means to be truly embedded in the core of cross-cultural exchange. On the basic premise of fully respecting cultural differences, digital technology should serve as an intermediary means to promote cultures of difference, with peace and equality

in a manner that promotes mutual absorption and learning, complementary strengths, and jointly depicts a curvilinear development landscape in which diverse cultural differences coexist and converge into collective force.

First, digital intelligence production should be used to reshape the paradigm of content creation and activate the global expression of cultural stories. Technological empowerment not only improves the efficiency of content creation, but also builds a narrative system that combines machine precision with humanistic warmth. While preserving cultural authenticity, it enhances the cross-cultural adaptability of stories through a human-machine interactive creation model. In the construction scenarios of the Digital Silk Road, digital tools should be applied flexibly to accelerate the formation of a triple paradigm of “symbol display—symbol translation—value resonance,” repositioning the role of digital means in cultural production and cultural exchange. Traditional cultural symbols should be translated for the present and integrated across boundaries; on the premise of ensuring cultural authenticity, new narrative works that possess both historical depth and resonance with the times should be generated, effectively enhancing the appeal and adaptability of cross-cultural narratives. Efforts should be made to build a cultural translation system that moves from symbolic perception to value resonance, advance the application of symbols on digital platforms, and, in the process of displaying specific cultural symbols, embed historical origins, cultural implications, spiritual meanings, and the like into the spatial arrangement of platform scenarios, thereby completing the key transition from visual display to meaning interpretation.

Second, digital-intelligent empathy should be used to renew the mechanism of

cultural communication and create an immersive digital space for dialogue, employing technologies such as extended reality to construct embodied scenarios for civilizational dialogue. Through carefully designed dialogue processes and intelligent assistance systems, participants can be guided from perception of cultural symbols toward understanding at the level of values, generating new cultural consensus and emotional connections in dialogic practice. Interactive technologies should be applied precisely to create multisensory experiential scenarios, guiding the construction of practical settings for a “digital cultural community” centered on common human issues—such as climate change, cultural heritage protection, and technological ethics—so that abstract concepts of cultural value can be transformed into perceptible, interactive, and embodied immersive experiences, laying a solid social foundation for building a digital civilizational order of “harmony in diversity.”

4.4 Qualitative Enhancement: Building Cultural Prosperity through Value Alignment and Trust Construction

Cross-cultural exchange in the digital era is, in essence, cultural collision, exchange, dialogue, and cooperation carried out through digital carriers, thereby producing resonance in spiritual consciousness. Its core significance lies in the digital expression of civilization: promoting the translation of culture through digital symbols, so as to enhance the profound reflection on human destiny, the unique wisdom of human historical development, and the philosophical insights into the harmonious development of humanity and nature contained in the cultural cores of different civilizations and ethnic groups, transforming them into stories that can be understood and resonate with global users.

Against the grand narrative background of the construction of the Digital Silk Road, improving the core substance of cross-cultural exchange requires fully aligning with the values of the community of human destiny, consciously embedding the aesthetic spirit and philosophical thought of different cultures into the underlying architecture and core algorithms of digital technology, and, under the standards of technological ethics, focusing on strengthening standard constraints in such areas as the supply of high-quality data, integrated innovation of multiple technologies, and the construction of security assessment frameworks. It also requires strengthening the foundation of cross-cultural trust in the use of data, bias control, and behavior interpretation within digital cultural spaces. The wisdom of different civilizations should be transformed into digital artworks with contemporary significance, realizing the continuation and development of civilizational genes through creative transformation. Cultural exchange should be promoted to enhance mutual trust, and consensus should be gathered through mutual respect and equal dialogue. Relying on carriers such as the BRICS mechanism, the dialogue mechanism should be used to break linguistic hegemony and discourse barriers, placing more issues of the “right to development” at the core of cooperation among “Global South” countries, and promoting the reconstruction of the order of cultural exchange and communi-

cation from “Western-centrism” toward a “multi-center hierarchical network.” Strong efforts should be made to advocate embedding a consensus on digital development into the technical architecture of jointly building the Digital Silk Road, establishing trust mechanisms in institutional design, and stimulating creativity in exchange practice, ultimately realizing a qualitative leap in cross-cultural exchange from information transmission to value resonance, and from technological coexistence to civilizational symbiosis.

[References]

- [1] Xi Jinping. Hold High the Great Banner of Socialism with Chinese Characteristics and Strive in Unity to Build a Modern Socialist Country in All Respects [N]. People’ s Daily Daily, 2022-10-26 (1).
- [2] Xi Jinping. Speech at the Symposium on Cybersecurity and Informatization Work [EB/OL]. (2016-04-19) [2026-06-22]. <http://politics.people.com.cn/n1/2021/0907/c1001-32220142.html>.
- [3] Jin Xin, Yuan Taoxiong. Empowering the High-Quality Development of Jointly Building the “Belt and Road” with Digital Technology [N]. *People’ s Daily*, 2024-04-18 (4).
- [4] Li Haimin. The “Digital Silk Road” and the Reconstruction of Global Cyberspace Governance [J]. *International Forum*, 2019, 21(6): 15-29, 155-156.
- [5] Yue Shumei, Xu Changdeng. Research on the Construction of a Collaborative Mechanism for Data Security Governance under the “Belt and Road” [J]. *Journal of Nanjing University of Posts and Telecommunications (Social Science Edition)*, 2025, 27(3): 80-90.
- [6] Chen Yiyi, Pi Yong. Cooperative Pathways for the Governance of Rules on Cross-Border Data Flows between China and the Five Central Asian Countries under the “Digital Silk Road” [J]. *Asia-Pacific Economic Review*, 2026(1): 35-49.
- [7] Castells M. The rise of the network society [M]. Cambridge: Blackwell Publishers, 1996: 5-23.
- [8] Gong Jianfei, Xiang Jiangsu. Digital Cultural Space: Basic Connotations, Generative Conditions, and Development Paths [J]. *Journal of Jiangxi Normal University (Philosophy and Social Sciences Edition)*, 2025, 58(5): 127-136.
- [9] Xie Xuefang. A Paradigm for the High-Quality Development of the Digital Cultural Industry in the Digital-Intelligence Era—Based on the “Technology—Culture—Institution” Model [J]. *Journal of Central China Normal University (Humanities and Social Sciences Edition)*, 2025, 64(5): 166-176.
- [10] Shi Anbin, Liu Changyu. Decoding the China Question in International Communication in the “VUCA Era” —An Analysis Based on the ACGT Model

- [J]. *Contemporary Communication*, 2022(3): 13-19.
- [11] Chen Lianjun, Huang Dexue. The Generative Logic, Conditional Dimensions, and Field Creation of Cross-Cultural Interaction Rituals in Cyberspace [J]. *Jinan Journal (Philosophy and Social Sciences Edition)*, 2025, 47(11): 103-119.
- [12] Gao Chundong, Guo Qiquan, Jiang Dong, et al. The Theoretical Foundations and Technical Paths of Cyberspace Geography [J]. *Acta Geographica Sinica*, 2019, 74(9): 1709-1722.
- [13] Crewe L. When virtual and material worlds collide: democratic fashion in the digital age [J]. *Environment & Planning A*, 2013, 45(4): 760-780.
- [14] Henri Lefebvre. *The Production of Space* [M]. Translated by Liu Huaiyu, et al. Beijing: The Commercial Press, 2021: 76.
- [15] Edward W. Soja. *Thirdspace: Journeys to Los Angeles and Other Real-and-Imagined Places* [M]. Translated by Lu Yang, et al. Shanghai: Shanghai Education Publishing House, 2005: 84.
- [16] Liu Yepin. Digital Space: The Real Construction of Internet Society [J]. *People's Forum · Academic Frontier*, 2023(10): 103-108.
- [17] Li Chunmin. On Lefebvre's Triadic Dialectics and Its Interpretive Predicament—Also on the Identification and Construction of Spatial Dialectics [J]. *Shandong Social Sciences*, 2023(9): 36-44.
- [18] Zhang Meng. Research on Cross-Cultural Communication from the Perspective of Actor-Network Theory [J]. *Cultural Industry Research*, 2021(2): 214-226.
- [19] Fan Chuanguo, Huang Junyang. The Actor-Network Reconstruction Mechanism of the International Communication Pattern in the Digital-Intelligence Era—Translation Logic and Chinese Practice Based on ANT Theory [J]. *International Communications*, 2025(8): 67-71.
- [20] Speedtest Global Index website [EB/OL]. [2026-05-09]. <https://www.speedtest.net/global-index>.
- [21] Compilation and Translation Bureau of Works of Marx, Engels, Lenin and Stalin of the CPC Central Committee. *Collected Works of Marx and Engels* (Vol. 8) [M]. Beijing: People's Publishing House, 2009: 358.
- [22] Shi Anbin, Zheng En. From Binary Opposition to Harmonious Coexistence: The Paradigm Shift of Cross-Cultural Communication in the Era of Digital-Intelligence Civilization [J]. *International Communications*, 2024(9): 4-7.
- Xie Guihai. "The Theoretical Logic, Dilemma, and Breakthrough Strategies of Intercultural Communication from the Spatial Perspective of the Digital Silk Road" [J]. *Journal of Documentation and Data*, 2026, 8(2): 003-015.

The Theoretical Logic, Dilemma, and Breakthrough Strategies of Intercultural Communication from the Spatial Perspective of the Digital Silk Road

Xie Guihai

(Guangxi Academy of Social Sciences, Nanning 530022, China)

Abstract: [Purpose/Significance] The digital characteristics embedded in the Digital Silk Road provide a digital spatial logic for intercultural communication that is distinct from traditional cultural exchange. This paper attempts to reveal the logical mechanism of intercultural communication under the new type of digital space constructed by the Digital Silk Road, identify potential risks, and explore countermeasures, so as to promote the deep integration of the Digital Silk Road blueprint with cultural exchange and realize the transition of civilizational dialogue from “coexistence” to “co-flourishing”. [Method/Process] By constructing an analytical framework of the “triadic conception of space” and taking “Spatial Practice –Representations of Space –Representational Space” as dimensions, this paper explores the conceptualization of digital space and enabling mechanism of intercultural communication. [Result/Conclusion] The study finds that, in the dimension of spatial practice, digital carriers have laid the “re-materialized” physical foundation and cultural flow paths for intercultural communication; in the dimension of representation of space, new spatial orders such as digital standards and rules have emerged; in the dimension of representational space, the empowerment of digital space has promoted the meaning reconstruction of the practicing subjects of intercultural communication in the digital age. At the same time, intercultural communication faces multidimensional risks in digital space, including new physical barriers formed by digital infrastructure, cultural biases driven by algorithms and deviations in cognitive frameworks that deepen cognitive gaps, and the absence or lack of rules leading to anomie of order in intercultural meaning. In response to the above risks, this paper proposes a breakthrough strategy of “spatial expansion –rule governance –core re-embedding –quality enhancement”, emphasizing the promotion of organic integration of digital space and cultural practice in the construction of the Digital Silk Road, so as to provide a practical and feasible path reference for civilizational mutual learning among countries and regions along the route.

Keywords: Digital Silk Road; Digital space; Cross-cultural communication

(Responsible editor: Kong Qingqing)

Note: Figure translations are in progress. See original paper for figures.

Source: ChinaXiv. Machine translation. Verify with the original.